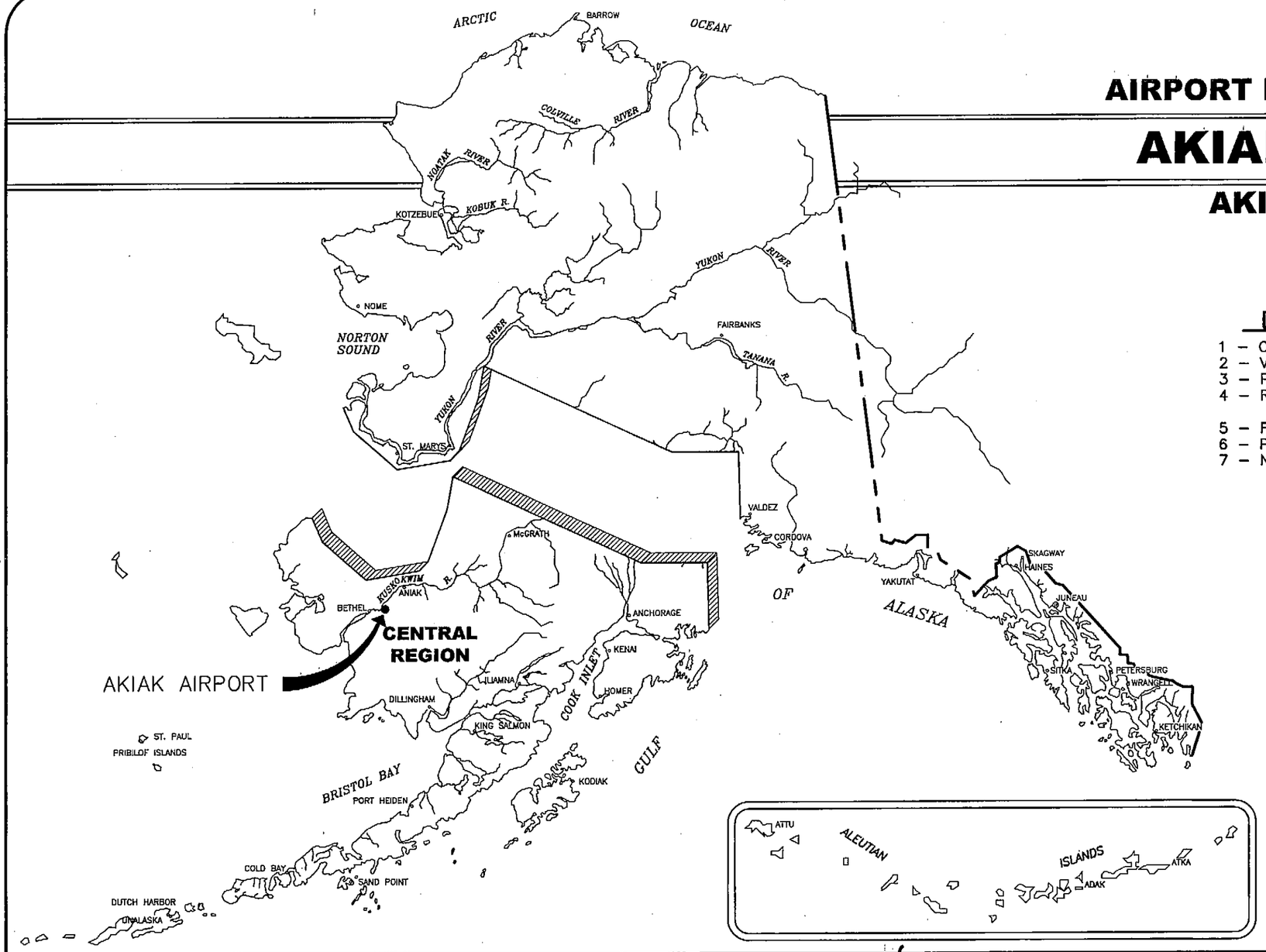


AIRPORT LAYOUT PLAN FOR

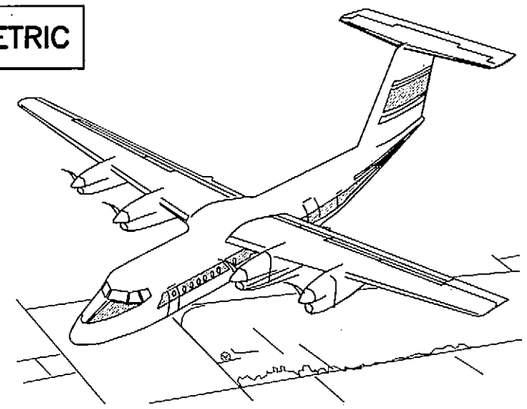
AKIAK AIRPORT

AKIAK, ALASKA

2002

DRAWING INDEX

METRIC



SPONSORED BY
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

CONCUR Steven R. Horn for DATE 4/1/02
GORDON C. KEITH, P.E. — DIRECTOR OF CONSTRUCTION AND OPERATIONS

APPROVED [signature] FOR DATE 3-29-02
STEVEN R. HORN, P.E. — REGIONAL PRECONSTRUCTION ENGINEER

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL SUBJECT TO ALP APPROVAL LETTER DATED 1/17/03
By: [signature] DATE: 1/17/03
FOR AIRPORTS DIVISION ALASKAN REGION, AAL-___

FAA AIRSPACE REVIEW NUMBER 00-AAL-

AKIAK AIRPORT
AKIAK, ALASKA
AIRPORT LAYOUT PLAN

SHEET 1 OF 7

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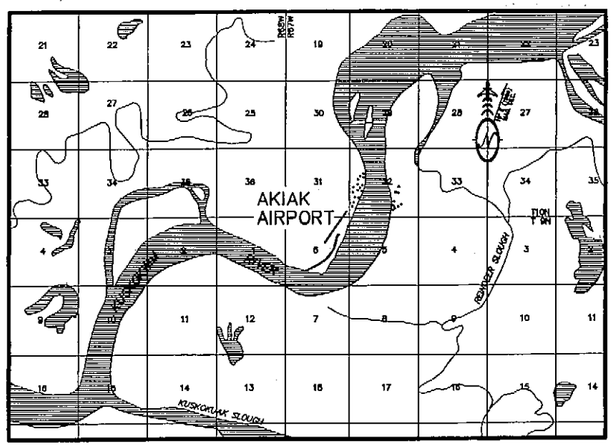

VICINITY MAP

T 10 N, R 67 W, SEC. 31
T 9 N, R 67 W, SEC. 6
SEWARD MERIDIAN
U.S.G.S. BETHEL (D-6), ALASKA

CONVERSION FACTORS FROM SI UNITS		
TO CONVERT FROM	TO	MULTIPLY BY
STATION (1000 METERS)	FEET (ft)	3280.84
KILOMETER (km)	MILE (mi)	0.6214
METER (m)	MILE (mi)	0.00062137
METER (m)	FOOT (ft)	3.28083333
MILLIMETER (mm)	FOOT (ft)	0.00328084
MILLIMETER (mm)	INCH (in)	0.03937008
SQUARE METER (m^2)	SQUARE FOOT (ft^2)	10.76391042
SQUARE METER (m^2)	SQUARE YARD (yd^2)	1.19599
HECTARE (ha)	ACRE (Ac)	2.4711
CUBIC METER (m^3)	CUBIC FOOT (ft^3)	35.3146667
CUBIC METER (m^3)	CUBIC YARD (yd^3)	1.3079506
CUBIC METER (m^3)	GALLON (US LIQUID)	264.17204
CUBIC METER (m^3)	M. GAL.	0.26417204
KILOGRAM (kg)	POUND-MASS (LBM)	2.2046225
MEGAGRAM (Mg)	TON (SHORT)	1.10231
NEWTON (n)	POUND-FORCE (LBF)	0.2248089
LUX (lx)	FOOTCANDLE	0.092903
DEGREE CELSIUS (°C)	DEGREE FAHRENHEIT (°F)	°F=(1.8 x °C)+32

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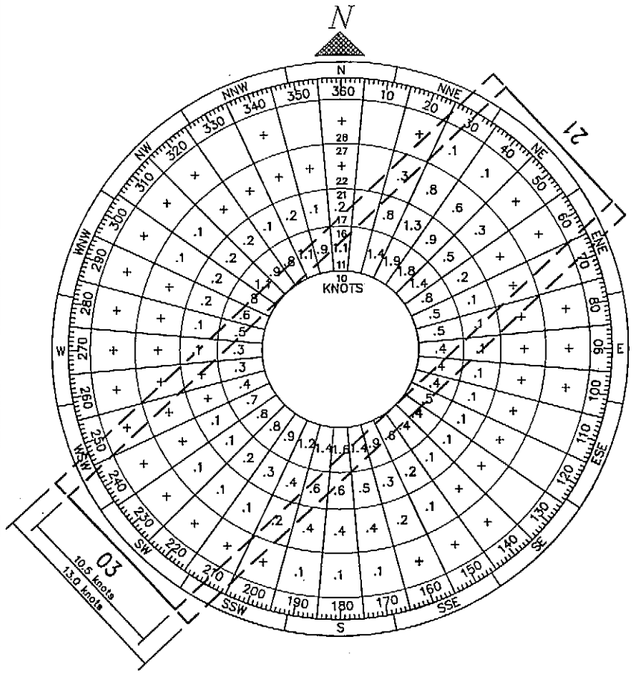


WIND DATA

WIND COVERAGE: 81.55% @ 10.5 KNOTS
88.98% @ 13.0 KNOTS

SOURCE: ALASKA STATE CLIMATIC CENTER
E.N.R.I. UNIVERSITY OF ALASKA, ANCHORAGE
DATA IS FOR BETHEL, ALASKA WHICH IS
32 km (19.9 mi) SOUTHWEST OF AKIAK

PERIOD: JANUARY 1992 – JUNE 1996

NONSTANDARD CONDITIONS

ITEM	EXISTING	STANDARD	FUTURE
WIND COVERAGE	88.98% @ 13 KNOTS *	95.0%	88.98% @ 13 KNOTS *
RUNWAY WIDTH	23m (75.5 ft)*	18m (59.1 ft)	23m (75.5 ft)*

* RUNWAY WIDTH INCREASED TO NEXT HIGHER AIRPORT REFERENCE CODE (B-II) TO PROVIDE FOR ADDITIONAL WIND COVERAGE.

NOTE: METRIC DIMENSIONS ARE IN ACCORDANCE WITH FAA AC 150/5300-13.
ENGLISH UNIT CONVERSIONS ARE APPROXIMATE AND ARE FOR INFORMATION ONLY.

BASIC DATA TABLE
RUNWAY DATA

ITEM		RUNWAY 3/21 EXISTING	RUNWAY 3/21 FUTURE
EFFECTIVE GRADE		0.0%	
% WIND COVERAGE		88.98%	
INSTRUMENT RUNWAY		NONE	
RUNWAY SURFACE		GRAVEL	
PAVEMENT STRENGTH (LBS.)		N/A	
APPROACH SURFACES		20:1	
VISIBILITY MINIMUM		VISUAL	
RUNWAY LIGHTING		M.I.R.L.	
RUNWAY MARKING		NONE	
NAVIGATION AIDS		NONE	
RUNWAY SAFETY AREA DIMENSION		36m x 1119m (118.1 ft x 3671.3 ft)	
RUNWAY DIMENSION		23m x 975m * (75.5 ft x 3198.8 ft)	
RUNWAY OBJECT FREE AREA DIMENSION		120m x 1119m (393.7 ft x 3671.3 ft)	
RUNWAY OBSTACLE FREE ZONE DIMENSION		75m x 1095m (246.1 ft x 3592.5 ft)	
RUNWAY END COORDINATES (N.A.D. 83)			
RUNWAY 21	LAT.	60°54'21.173" N	
	LONG.	161°13'26.459" W	
RUNWAY 03	LAT.	60°53'59.883" N	
	LONG.	161°14'13.745" W	

BASIC DATA TABLE
AIRPORT DATA

ITEM		EXISTING	FUTURE
AIRPORT ELEVATION (M.S.L.)		12.12m(39.76 ft)	12.12m(39.76 ft)
AIRPORT REFERENCE POINT (A.R.P.)	LAT.	60°54'10.429" N	60°54'10.429" N
	LONG.	161°13'50.105" W	161°13'50.105" W
TAXIWAY LIGHTING		M.I.T.L.	M.I.T.L.
RAMP LIGHTING		NONE	NONE
MEAN MAXIMUM TEMPERATURE, HOTTEST MONTH (JULY)		17° C (62.6° F)	17° C (62.6° F)
MEAN MINIMUM TEMPERATURE, COLDEST MONTH (JANUARY)		-18° C (-0.4° F)	-18° C (-0.4° F)
MAGNETIC DECLINATION, YEAR		19° E (1998)	19° E (1998)
AIRPORT CATAGORY		B-1	B-1
AIRPORT AND TERMINAL NAVIGATION AIDS		NONE	NONE

LEGEND

ITEM	EXISTING	FUTURE
PROPERTY LINE		
AIRPORT REFERENCE POINT (A.R.P.)		
WIND CONE AND SEGMENTED CIRCLE		
CONTOURS	10	
ROADWAYS		
BUILDINGS		
ROTATING BEACON		
SHORELINE		
RUNWAY THRESHOLD LIGHT		
EDGE OF TREES		
RUNWAY PROTECTION ZONE (RPZ)	RPZ	RPZ
RUNWAY SAFETY AREA (RSA)	RSA	RSA
OBJECT FREE AREA (OFA)	OFA	OFA
BUILDING RESTRICTION LINE (BRL)	BRL	BRL
OBSTACLE FREE ZONE (OFZ)	OFZ	OFZ

FILE:
DATE:

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL SUBJECT TO ALP APPROVAL LETTER DATED 1/2/03
By: [signature] DATE: 1/7/03
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-600

F.A.A. AIRSPACE REVIEW NUMBER: 02-AAL-162NRA

BY	DATE	REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

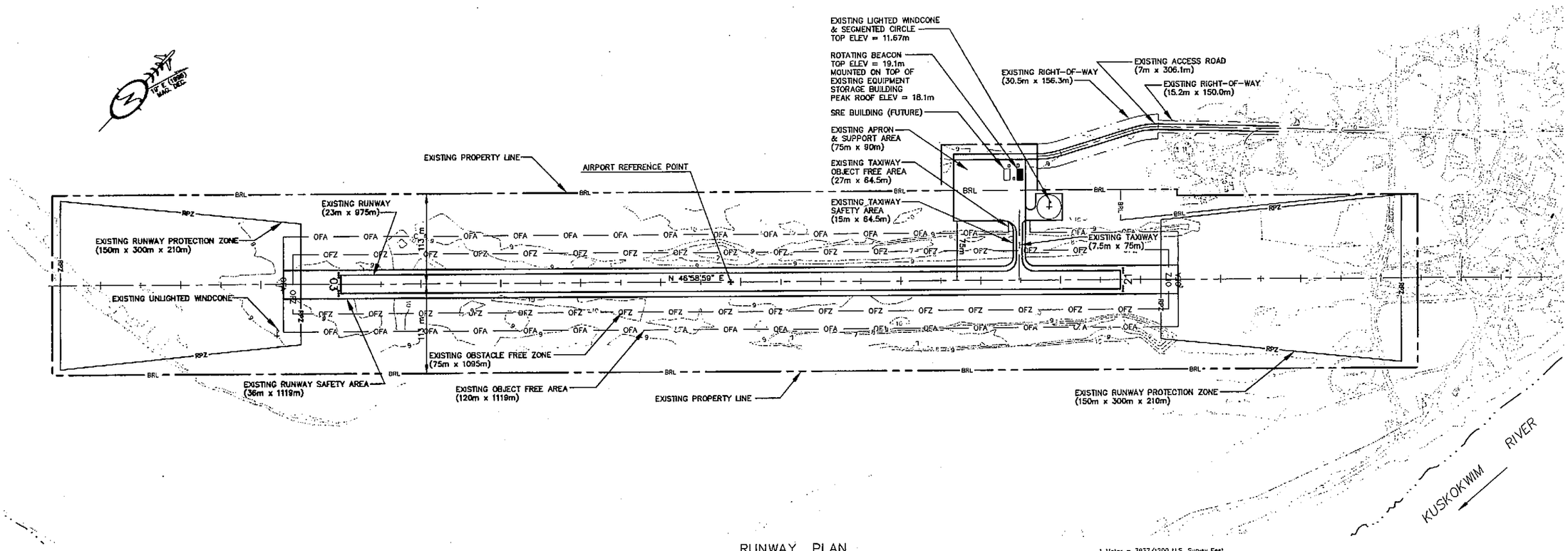
APPROVED: [signature]
STEPHEN M. RYAN, P.E. DESIGN SECTION CHIEF
APPROVED: [signature]
JOHN G WAHL, P.E. PROJECT MANAGER

DATE 4/1/02
DESIGN
DRAWN MBD
CHECKED

AKIAK AIRPORT

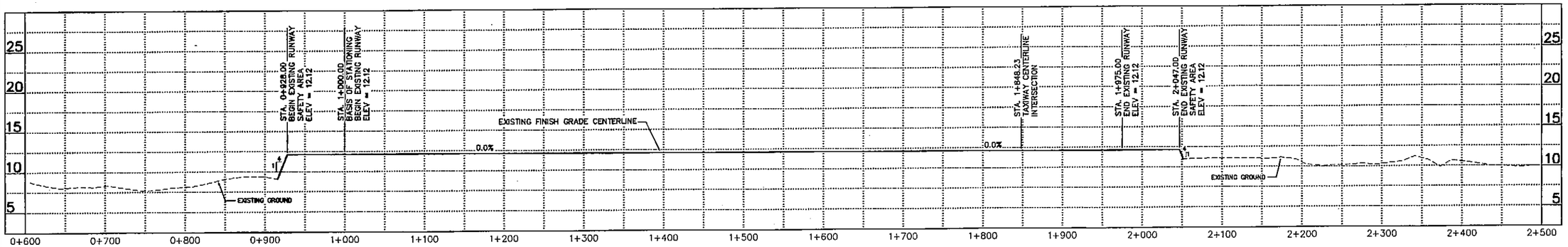
AIRPORT LAYOUT PLAN
VICINITY MAP & DATA TABLES

SHEET 2 OF 7



RUNWAY PLAN
SCALE – 1:2500

1 Meter = 3937/1200 U.S. Survey Feet
50 0 25 50 100 150 200 250
SCALE IN METERS



RUNWAY PROFILE
HORZ. SCALE – 1:2500
VERT. SCALE – 1:250

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FILE:
DATE:

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL SUBJECT TO ALP APPROVAL LETTER DATED 4/17/03
By: [signature] DATE: 4/17/03
FAA AIRPORTS DIVISION ALASKAN REGION, AAL-
FAA AIRSPACE REVIEW NUMBER: 00-AAL-600-

BY	DATE	REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

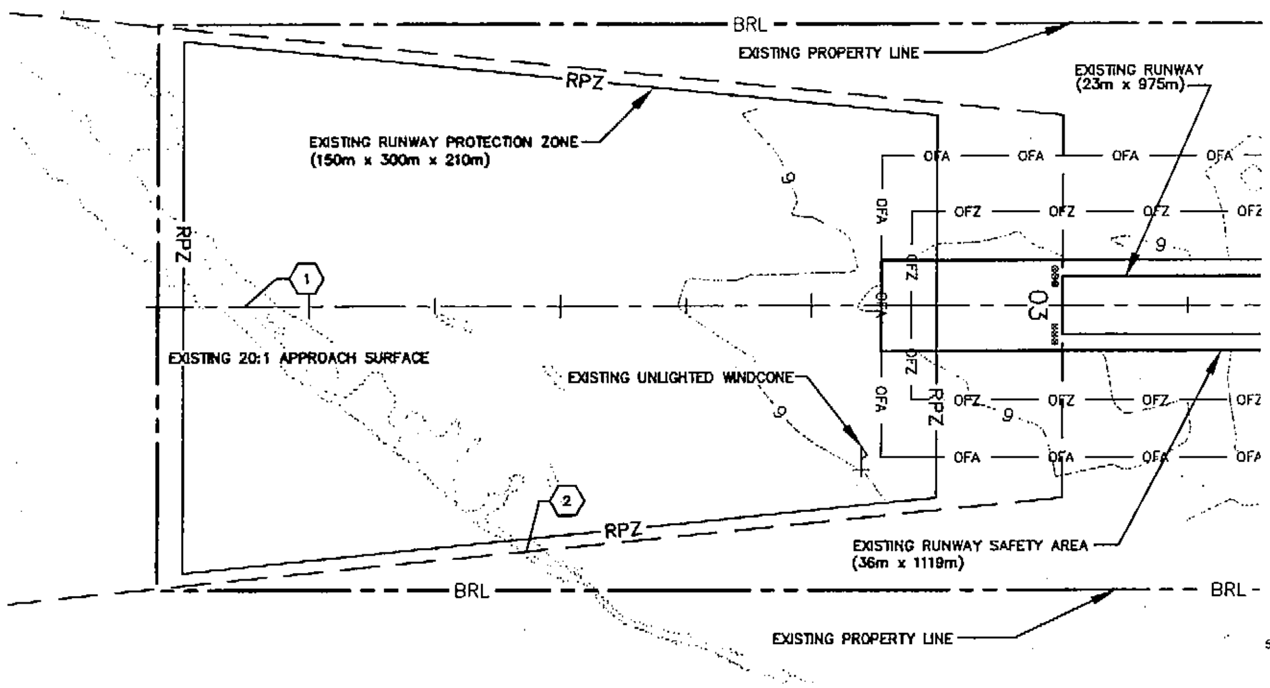
APPROVED: [signature] STEPHEN M. RYAN, P.E. DESIGN SECTION CHIEF
APPROVED: [signature] JOHN G. WAHL, P.E. PROJECT MANAGER

DATE 4/01/02
DESIGN
DRAWN [signature]
CHECKED [signature]

AKIAK AIRPORT
AKIAK, ALASKA

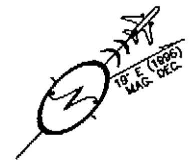
AIRPORT LAYOUT PLAN
PLAN & PROFILE

SHEET 3 OF 7

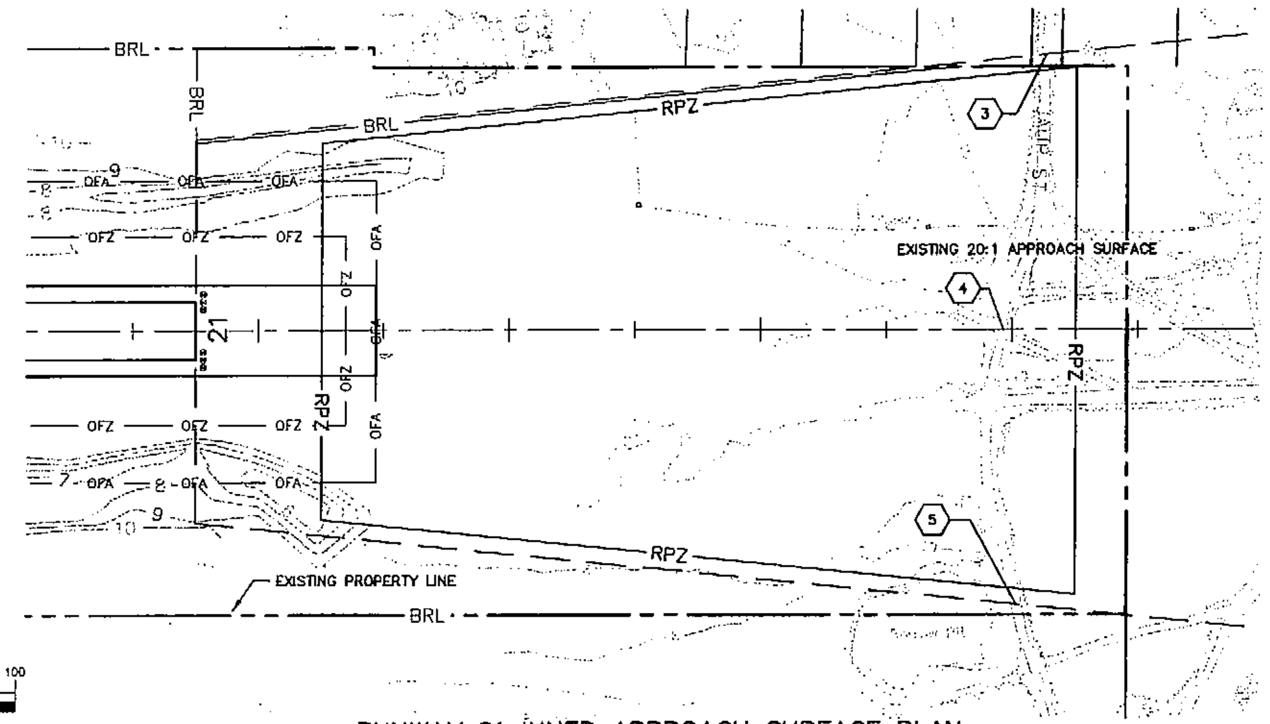


RUNWAY 03 INNER APPROACH SURFACE PLAN

SCALE – 1:1500



SCALE IN METERS

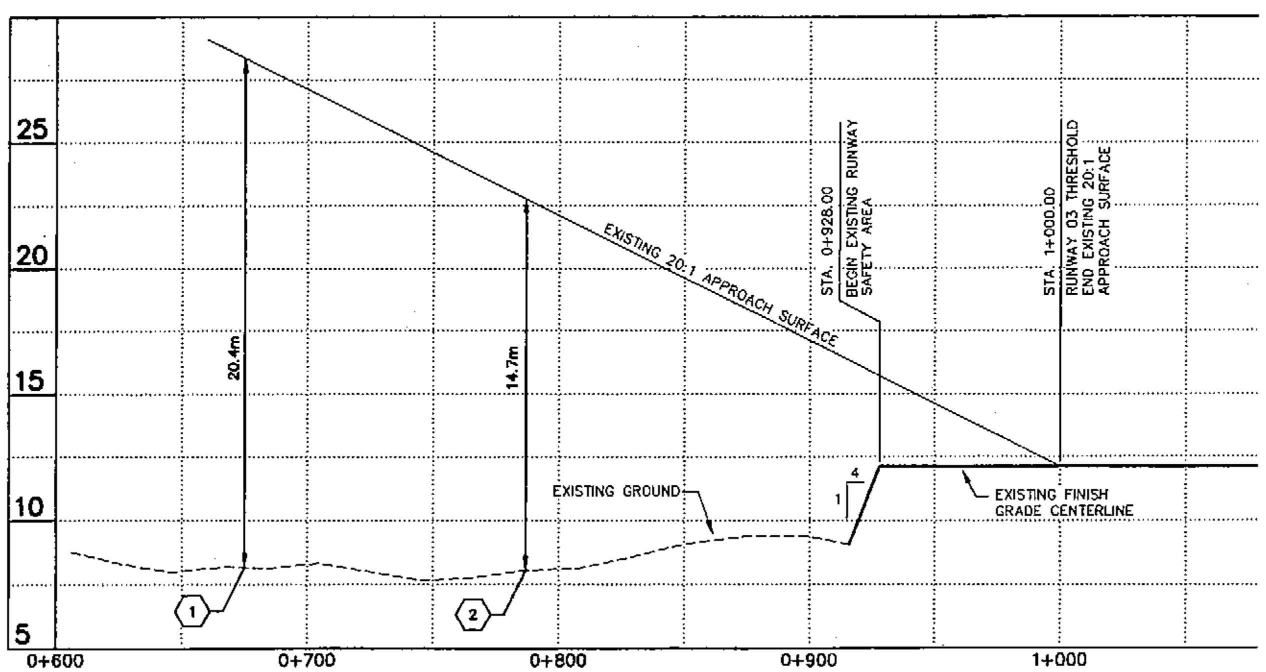


RUNWAY 21 INNER APPROACH SURFACE PLAN

SCALE – 1:1500

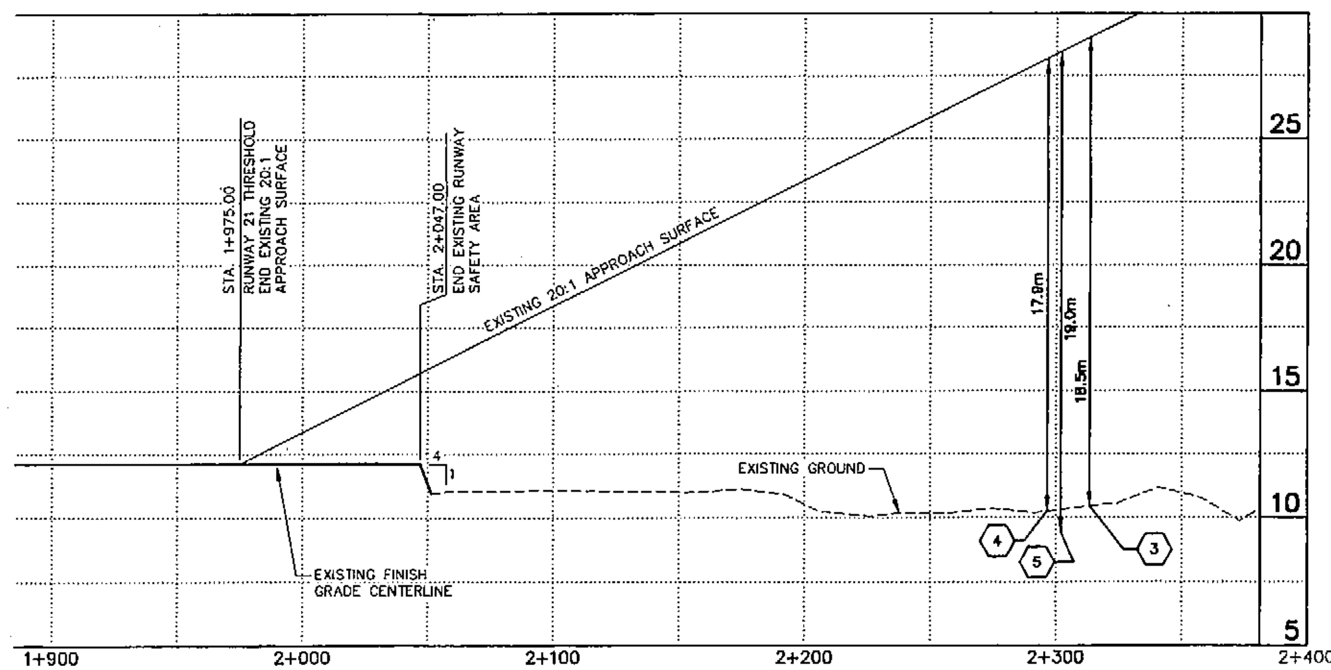
INNER APPROACH SURFACE OBSTRUCTION TABLE						
NO.	DESCRIPTION	OBJECT ELEVATION	APPROACH SURFACE ELEVATION	VERTICAL CLEARANCE	PENETRATION	DISPOSITION
1	TRAIL	8.2 m	28.3 m	20.1 m	0.0 m	N/A
2	TRAIL	8.1 m	22.8 m	14.7 m	0.0 m	N/A
3	ROAD	11.0 m	29.5 m	18.5 m	0.0 m	N/A
4	ROAD	10.1 m	28.0 m	17.9 m	0.0 m	N/A
5	ROAD	8.0 m	27.0 m	19.0 m	0.0 m	N/A

NO OFZ OBJECT PENETRATIONS
NO THRESHOLD SITING SURFACE PENETRATIONS



RUNWAY 03 INNER APPROACH SURFACE PROFILE

HORZ. SCALE – 1:1500
VERT. SCALE – 1:150



RUNWAY 21 INNER APPROACH SURFACE PROFILE

HORZ. SCALE – 1:1500
VERT. SCALE – 1:150

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FILE:
DATE:

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL, SUBJECT TO ALP APPROVAL LETTER DATED 4/17/03

By: [signature] DATE: 4/17/03
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-

FAA AIRSPACE REVIEW NUMBER: 00-AAL-600

BY	DATE	REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: [signature]
STEPHEN M. RYAN, P.E. — DESIGN SECTION CHIEF

APPROVED: [signature]
JOHN G. WAHL, P.E. — PROJECT MANAGER

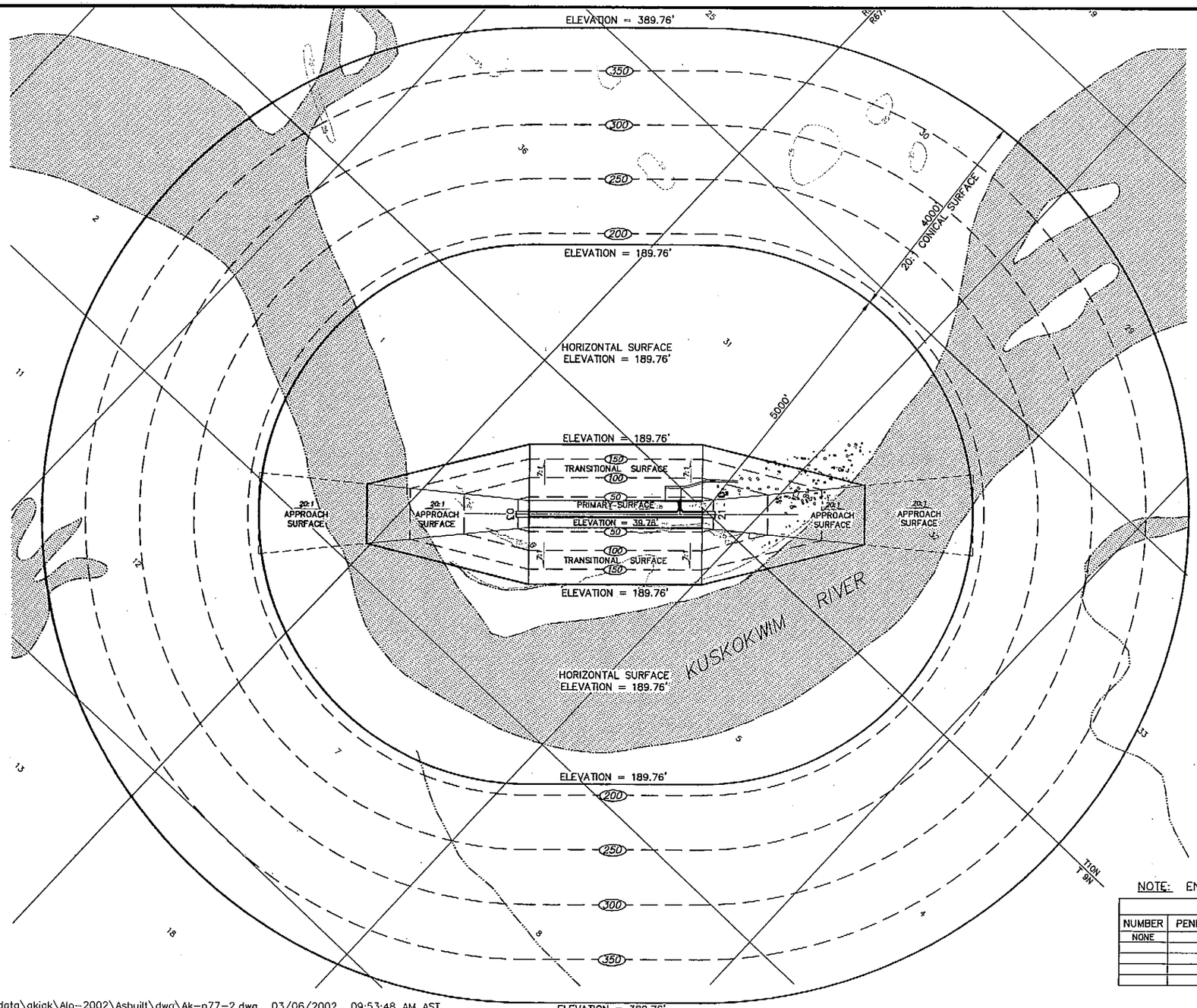
DATE 4/01/02
DESIGN
DRAWN [initials]
CHECKED [initials]

AKIAK AIRPORT

AKIAK, ALASKA

AIRPORT LAYOUT PLAN
RUNWAY 03/21 APPROACH SURFACES
PLAN AND PROFILE

SHEET 4 OF 7



18° E (1996) MAG. DEC.

SCALE: 1" = 1000'

1000' 500' 0 500' 1000' 2000'

SCALE IN FEET

LEGEND

WATER SURFACE

EDGE OF WATER

NOTES

1. AIRPORT AND RUNWAY ELEVATIONS ARE 39.76'.
2. ALL DIMENSIONS AND ELEVATIONS ARE IN FEET.

NOTE: ENGLISH DIMENSIONS ARE IN ACCORDANCE WITH FAA AC 150/5300-13.

OBSTRUCTION DATA TABLE		
NUMBER	PENETRATION DISTANCE	DESCRIPTION
NONE		

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FILE:

DATE:

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL SUBJECT TO ALP APPROVAL LETTER DATED 1/17/03

BY: [signature] DATE: 1/22/03

FAA AIRPORTS DIVISION ALASKAN REGION, AAL-600

F.A.A. AIRSPACE REVIEW NUMBER: 00-AAL-

BY	DATE	REVISIONS

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION

APPROVED: [signature] STEPHEN M. RYAN, P.E. DESIGN SECTION CHIEF

APPROVED: [signature] JOHN G WAHL, P.E. PROJECT MANAGER

DATE 4/04/02

DESIGN

DRAWN

CHECKED

AKIAK AIRPORT

AIRPORT LAYOUT PLAN
F.A.R. PART 77 SURFACES

SHEET 5 OF 7

SURVEY NOTES

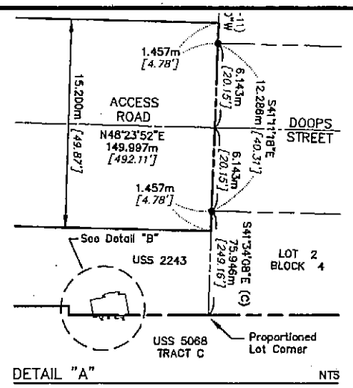
1. The minimum closure of all traverses meets or exceeds 1:10,000.
2. The basis of bearings for this survey is the mean NAD 83 geodetic bearing between runway centerline monuments at Station 1+000 and Station 1+975, according to GPS survey control, July 1998 originating from NGS B order GPS station "CABIN" located near Bethel; said mean bearing is N46°58'59"E.
3. The bearings shown are local plane bearings as oriented to the basis of bearings, and distances shown are reduced to horizontal ground distances.
4. The origin of coordinates is the centerline monument at Station 1+000, a 5/8"x30" rebar with 2" aluminum cap stamped as shown hereon, having the following coordinates:

   ASPC 83 ZONE 7: NAD 83:
   N 766,588.8603 LAT 60°53'59.68294" N
   E 541,400.8318 LONG 161°14'13.74542" W
   H 9.077

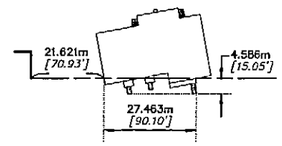
   The project grid factor used hereon is 0.9999229 and the mapping angle is 00°40'21".
5. The meter to foot conversion factor is 3937/1200.
6. Information hereon is based on an actual field survey conducted during May 1997.
7. Bearings shown for the remainder of Tract D, USS 5068 are record bearings rotated counterclockwise 0°01'01" to agree with bearings used for this survey. These bearings are shown as being computed (C). Record distances were held throughout Tract D remainder unless noted otherwise.
8. All monuments shown hereon were found or set in May 1997.
9. Distances are horizontal ground meter units with U.S. Survey Feet in italicized brackets [ ].

LEGEND

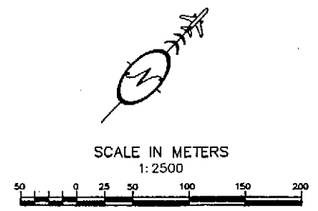
- Proposed Runway Centerline
- Proposed Access Road Centerline
- Proposed Airport Boundary
- Property Line
- Protracted Section Line
- Proposed Edge of Gravel
- Proposed Runway Protection Zone
- Found Brass Cap Monument
- Set 2" Aluminum Cap on 5/8" x 30" Rebar
- Found 1-1/2" Aluminum Cap on 5/8" x 30" Rebar
- WCMC -- searched for, not found
- (C) Computed
- (R) Record per USS 5068
- [ ] Distance in U.S. Survey Feet

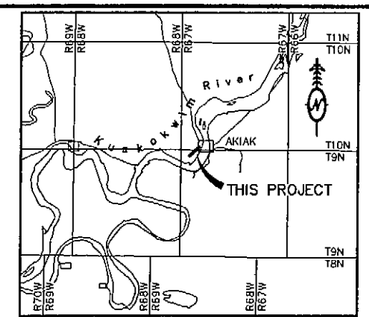


DETAIL "A" NTS



DETAIL "B" NTS

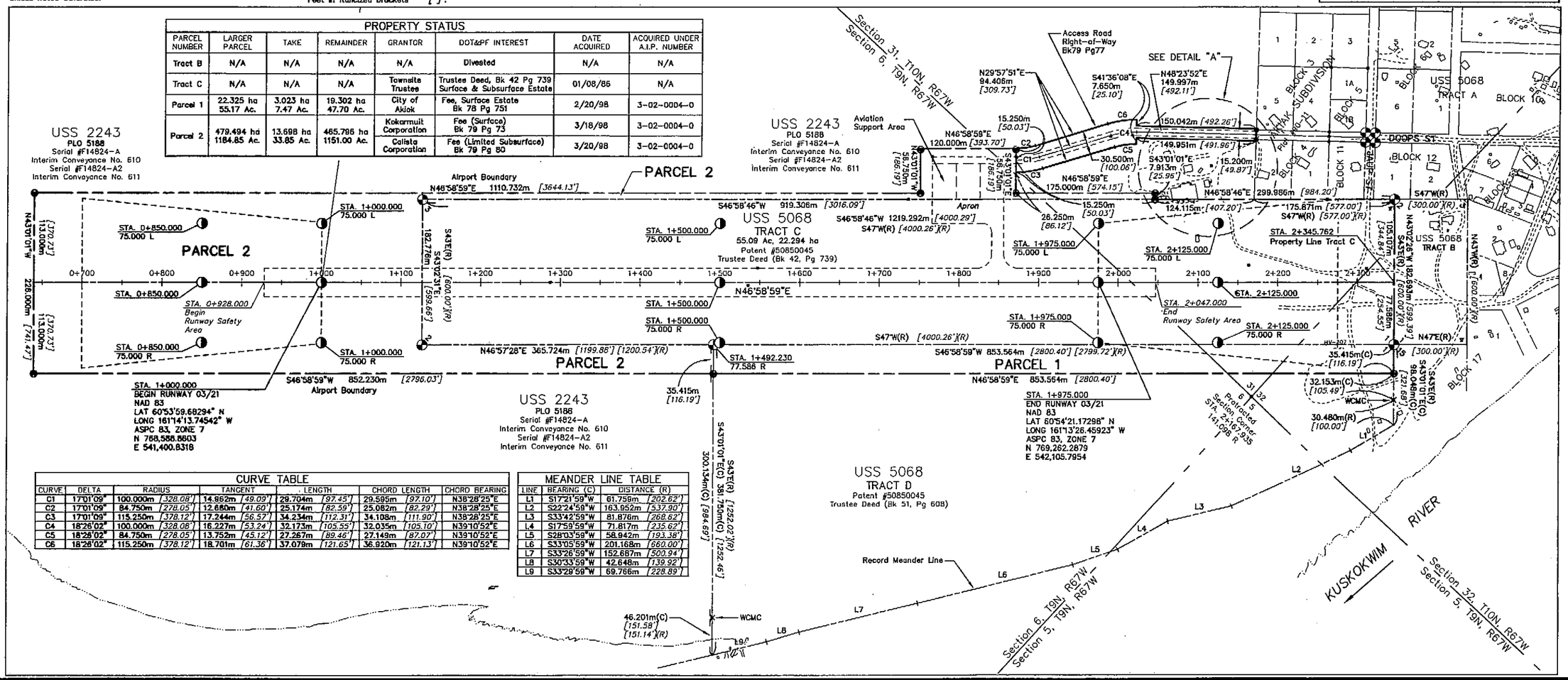




VICINITY MAP SCALE - 1:250,000
Surveyed Section 5 & 6, T9N, R67W, Seward Meridian
Surveyed Section 31 & 32, T10N, R67W, Seward Meridian
U.S.G.S. BETHEL (D-6), ALASKA
Bethel Recording District

PROPERTY STATUS

PARCEL NUMBER	LARGER PARCEL	TAKE	REMAINDER	GRANTOR	DOT&PF INTEREST	DATE ACQUIRED	ACQUIRED UNDER A.I.P. NUMBER
Tract B	N/A	N/A	N/A	N/A	Divested	N/A	N/A
Tract C	N/A	N/A	N/A	Townsite Trustee	Trustee Deed, Bk 42 Pg 739 Surface & Subsurface Estate	01/08/86	N/A
Parcel 1	22.325 ha 55.17 Ac.	3.023 ha 7.47 Ac.	19.302 ha 47.70 Ac.	City of Akiak	Fee, Surface Estate Bk 78 Pg 751	2/20/98	3-02-0004-0
Parcel 2	479.494 ha 1184.85 Ac.	13.698 ha 33.85 Ac.	465.786 ha 1151.00 Ac.	Kokarmuit Corporation	Fee (Surface) Bk 79 Pg 73	3/18/98	3-02-0004-0
				Calista Corporation	Fee (Limited Subsurface) Bk 79 Pg 80	3/20/98	3-02-0004-0



CURVE TABLE

CURVE	DELTA	RADIUS	TANGENT	LENGTH	CHORD LENGTH	CHORD BEARING
C1	17°01'09"	100.000m [328.08']	14.862m [49.09']	28.704m [97.45']	28.595m [97.10']	N38°28'25"E
C2	17°01'09"	84.750m [278.05']	12.680m [41.60']	25.174m [82.59']	25.082m [82.29']	N38°28'25"E
C3	17°01'09"	115.250m [378.12']	17.244m [56.57']	34.234m [112.31']	34.108m [111.90']	N38°28'25"E
C4	18°26'02"	100.000m [328.08']	16.227m [53.24']	32.173m [105.55']	32.035m [105.10']	N39°10'52"E
C5	18°26'02"	84.750m [278.05']	13.752m [45.12']	27.267m [89.46']	27.149m [87.07']	N39°10'52"E
C6	18°26'02"	115.250m [378.12']	18.701m [61.36']	37.079m [121.65']	36.920m [121.13']	N39°10'52"E

MEANDER LINE TABLE

LINE	BEARING (C)	DISTANCE (R)
L1	S17°21'59"W	61.758m [202.62']
L2	S22°24'59"W	163.952m [537.90']
L3	S33°42'59"W	81.876m [268.62']
L4	S17°59'59"W	71.817m [235.62']
L5	S28°03'59"W	58.942m [193.38']
L6	S33°05'59"W	201.168m [660.00']
L7	S33°26'59"W	152.687m [500.94']
L8	S30°33'59"W	42.648m [139.92']
L9	S33°29'59"W	69.766m [228.89']

AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL SUBJECT TO ALP APPROVAL LETTER DATED 1/10/03
By: [signature] DATE: 1/7/03
FAA AIRPORTS DIVISION ALASKAN REGION, AAL-___
FAA AIRSPACE REVIEW NUMBER: 00-AAL-600

FILE:
DATE:

BY	DATE	REVISIONS
PLH	3/04/02	REMOVE PROPOSED RUNWAY TEXT
KPG	11/1/01	UPDATE PROPERTY STATUS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: [signature] STEPHEN M. RYAN, P.E. DESIGN SECTION CHIEF
APPROVED: [signature] JOHN G. WAHL, P.E. PROJECT MANAGER

DATE 4/01/02
DESIGN
DRAWN MDB
CHECKED JGW

AKIAK AIRPORT
AKIAK, ALASKA
AIRPORT LAYOUT PLAN
PROPERTY PLAN

PROPERTY PLAN SHEET 1 OF 1

SHEET 6 OF 7

AKIAK AIRPORT
AIRPORT LAYOUT PLAN NARRATIVE REPORT

A. Purpose

This Narrative Report is included with the Airport Layout Plan for Akiak Alaska, in accordance with Federal Aviation Administration (FAA) Airport Design Advisory Circular (AC) 150/5300-13, Appendix 7. The design of this project is being completed in SI (metric) units and all measurements and units are in accordance with ASTM E 380-93. Metric dimensions for future construction items are in accordance with FAA AC 150/5300-13. English dimensions are approximate except when used for existing conditions and are for information only. The rationale for improvements to the Akiak Airport are outlined in this report.

B. Introduction

Akiak is located in the Lower Kuskokwim region, 587 km (365 miles) west of Anchorage and 32 km (20 miles) northeast of Bethel, Alaska at 60°30'N Latitude, 161°10'W Longitude. Prior to the early 1900's, the village was located across the river from its present site. The Akiak Airport, first constructed by the federal government in 1941, is the only reliable year-round means of transportation available to the community. The existing airport is located on state-owned land at the southern edge of the village, directly adjacent to the Akiak Community Center. The entire community of Akiak and the airport are located within the Kuskokwim River floodplain and serious flooding occurs periodically. The new airport will be constructed in the same general location as the existing runway but will be raised above flood level.

C. Current and Forecasted Airport Activity

According to statistics from the Alaska Department of Labor, Akiak had a population of 187 in 1960. The population decreased over the next ten years to 171 in 1970. Since then, the population has increased to 198 in 1980 and to 275 in 1990. The Alaska Department of Labor estimates the population of Akiak was 320 in 1995. The average annual increase in population of approximately two percent has been used to estimate future airport activity.

Operators reported carrying an average of 1.5 passengers per passenger flight on general short distance operations. Overall loads on all flights, including freight and return flights, is about 0.75 passengers per flight. There were an estimated 3,910 air taxi operations at the Akiak Airport in 1995, a steady increase over previous years.

Since there are no based aircraft at Akiak, general aviation activity levels at Akiak Airport are low compared to air taxi and cargo traffic. A small percentage of general aviation activity originates as training flights from Bethel. An additional 50 flights per year originate from military activity in the area. Airport activity at Akiak Airport in recent years is summarized in Table 1.

Table 1
Estimated Passenger and Operations Activity
Akiak Airport: 1980 – 1995

YEAR	ENPLANED PASSENGERS	AIR TAXI/ COMMUTER	GENERAL AVIATION	MILITARY	TOTAL
1980	1,865	2,430	UNKNOWN	50	2,480
1985	2,008	2,810	UNKNOWN	50	2,860
1990	2,270	3,380	400	50	3,830
1994	2,393	3,620	420	50	4,090
1995	2,948	3,910	430	50	4,390

In addition to passenger activity, Akiak Airport is vital for receiving small cargo year-round because of the isolation of Akiak from other transportation options. In 1995, 53,600 kg (118,000 lbs) of cargo was shipped to Akiak via air.

Six carriers, based at the Bethel Airport, serve the community of Akiak using a range of small aircraft that includes the Cessna 206/207, Cessna 172, and Piper Navajo. Survey results indicate that most air taxi operators wish to expand their fleets to include the de Havilland Twin Otter or Piper Navajo.

Past increases in enplanements at Akiak Airport have reflected increases in village population. There are currently occasional periods when demand for aircraft parking exceeds available apron space. In addition, the National Plan of Integrated Airport Systems Reports predicted one aircraft would be based in Akiak by the year 2000. Based on growth in the local area and improvements at the airport that may permit long term aircraft parking, it is reasonable to assume that at least one, and possibly two, small general aviation aircraft could be based at Akiak during the 20 year planning period.

Future growth is expected to be dependent on population; therefore, enplanement forecasts use a two percent annual growth rate. Forecast results are shown in Table 2.

Table 2
Forecast Summary
Akiak Airport

YEAR	ANNUAL AIRPORT OPERATIONS				ANNUAL ENPLANED PASSENGERS	AIR CARGO kg (lbs)
	AIR TAXI	GENERAL AVIATION	MILITARY	TOTAL		
1995	3,910	430	50	4,390	2,948	53,600 (118,000)
2000	4,310	475	50	4,835	3,250	54,700 (130,300)
2005	4,760	525	50	5,335	3,590	55,800 (143,800)
2010	5,280	580	50	5,910	3,960	56,900 (158,800)
2015	5,840	640	50	6,530	4,370	58,100 (175,300)

D. Airport Development

LONG TERM (4-20 YEARS) DEVELOPMENT
Long term development at the Akiak Airport will add a crosswind runway if it is found necessary.

E. Design Rationale

To ensure that airport improvements serve the community throughout the next 20 years, it is important that airport development components be adequately sized and meet established safety standards. The standards are established by the Alaska Aviation System Plan (AASP) and the FAA Advisory Circular 150/5300-13, Change 5. The AASP classifies the role for Akiak Airport as a "community class airport"; that is, "the primary land or water access point to small rural communities of at least 25 permanent year-round residents, without other reliable year-round access."

1. Airport Reference Code

The Akiak Airport was designed to meet FAA AC 150/5300-13, Approach Category B standards for landing speeds greater than 91 knots but less than 121 knots. The airport also meets airport design specifications for Aircraft Design Group I (ADG I); that is, aircraft with wingspans less than 15 m, according to FAA Advisory Circular 150/5300-13, Airport Design.

2. Wind Coverage

Accurate and reliable wind data is not available for Akiak Airport since there is no on-site data collection center. Wind data from Bethel, which is 32 km (20 miles) down river from Akiak, has been used to evaluate wind coverage at the Akiak Airport. A bearing of 16° gives the best wind coverage for the prevailing winds. At this alignment the wind coverage is 86.48% at 10.5 knots and 92.66% at 13.0 knots. The existing runway and the designed runway have parallel centerlines at a bearing of about 47°. According to the Bethel wind data, the wind coverage for the Akiak Airport runway is 81.55% at 10.5 knots and 88.94% at 13.0 knots.

FAA recommends a crosswind runway be considered for airports with less than 95% wind coverage from a single runway which experiences winds in excess of 10.5 knots (AC 5300-13 CHG 5, 11/10/94). Wind coverage equaling 95% can not be attained at Akiak without a crosswind runway. Because no crosswind runway will be constructed at Akiak during the 20 year planning period, a compromise measure to increase wind coverage was developed. The runway width dimensions will be increased to B-II standards, while all other airport dimensions remain at small aircraft and B-I standards. This option will increase wind coverage to approximately 89% while meeting all other objectives of airport improvement.

3. Runway

According to the AASP for community class airports, the runway must be 975 m (3,200 ft) long. This runway length will accommodate nearly all small aircraft with less than 10 passenger seats, as calculated according to AC 150/5325-4A Chapter 2. According to AC 150/5300-13, for B-II aircraft the runway must be 23 m (75 ft) wide with a 3 m (10 ft) wide shoulder. The safety area, according to B-I standards, must be a minimum of 36 m (120 ft) wide and extend 72 m (240 ft) beyond the runway ends. The runway object free area must be 120 m (400 ft) wide and extend 72 m (236 ft) beyond each end of the runway for B-I aircraft. There must be a runway protection zone at both runway ends. According to AC 150/5300-13, the runway protection zone for visual approaches by aircraft in approach categories A and B must be 300 m (1000 ft) long by 150 m (500 ft) wide at the inner end and 210 m (700 ft) wide at the outer end.

4. Taxiway

The runway is connected to the apron and aviation support area by a taxiway 7.5 m (25 ft) wide and 60 m (200 ft) long from the face of the apron to the centerline of the runway. The taxiway safety area must be 15.0 m (49 ft) wide and 58 m (190 ft) long.

5. Apron

Apron frontage has a length of 90 m (295 ft) and a width (depth) of 75 m (246 ft). These dimensions allow for two commercial lease lots (30 m x 45 m or 98 ft x 148 ft) and one lot reserved for the ADOT&PF equipment storage building. The apron will be set back 75 m (246 ft) from the runway centerline.

In the Assurances for Airport Sponsors (c. 24; pg.12), FAA requires the airport sponsor to make the airport as self-sustaining as possible. With few opportunities for revenue generation at bush community airports, it is prudent to develop lease lots at the time of apron construction. If lease lots are not developed at the time of airport construction, loss of economies of scale renders the cost for development of lease lots unjustified by collection of lease fees.

For this reason, it is recommended that the apron design allow for five aircraft tie-downs (two for aircraft based at the airport and three for itinerant aircraft), a cargo and passenger loading area, and a taxi lane. Because of the small volume expected, parking for ground transportation can be accommodated within the aviation support area. This apron configuration works well for small, rural airports where one apron serves all the airport's needs. In the future, if larger aircraft such as the DC-6 (design group II) were to use the airport to deliver cargo or transport commercial fish catches, the proposed apron dimensions would be adequate to allow aircraft to taxi onto it and turn around.

6. Access Road

The airport access road is an extension of Doops Street that connects to the western side of the new apron. Because it is an extension of Doops Street, it will be maintained by the city of Akiak.

Table 3 provides a comparison of the minimum airside requirements for community class airports in Alaska (according to both the AASP and FAA AC 150/5300-13) to conditions found at the Akiak Airport.

Table 3
Comparison of Standards to Existing Facilities

CATEGORY	STANDARD	EXISTING CONDITION
Runway Length	975 m (3,200 ft)	975 m (3,200 ft)
Runway Width	23 m (75 ft) (B-II)	23 m (75 ft) (B-II)
Safety Area Length	1,119 m (3,670 ft)	1,119 m (3,670 ft)
Safety Area Width	36 m (120 ft)	36 m (120 ft)
Runway Surface	Gravel	Gravel
Taxiway Type	Exit taxiway, 7.5 m (25 ft) wide	Exit taxiway, 7.5 m (25 ft) wide
Apron Size	5,574 m^2 (60,000 ft^2)	5,574 m^2 (60,000 ft^2)
Lighting	Medium Intensity Runway Lighting (MIRL)	Medium Intensity Runway Lighting
Service Access	Secondary Road	Secondary Road

F. Property Status

The State of Alaska owns the lands surrounding the Akiak Airport U.S. Survey 5068, Alaska, as Tract C which encompasses 22.29 hectares (55.06 acres) of land. Sheet 6 of this Airport Layout Plan is the Property Plan completed for the airport and access road.

G. Akiak Landfill

Garbage is dumped in an unpermitted landfill (operated by the city) adjacent to the sewage lagoon and approximately 750 m (2,641 ft) west of the airport. The FAA Order 5200.5A recommends a separation distance of 1,524 m (5,000 ft) between a runway used by piston type aircraft and solid waste disposal facility to minimize bird strike hazards. The landfill does not meet the recommended minimum separation distance from the airport.

H. Community Involvement

The residents have been informed of the planned development through written correspondence and through public meetings held in Akiak. Additional opportunities for discussion and comment have occurred through the Environmental Assessment process. Written correspondence from residents is on file at the ADOT&PF Central Region offices.

I. Nonstandard Conditions

The wind coverage (about 89% at 13.0 knots, B-II runway width) still does not meet the recommended 95%. The estimated cost, in 1997 dollars, of constructing a crosswind runway is $2,500,000 and is not justified by the type of use at the Akiak Airport. It is the current policy of the ADOT&PF to provide rural Alaskan communities with one runway constructed to the dimensions recommended in the FAA and AASP standards.

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AIRPORT LAYOUT PLAN CONDITIONAL APPROVAL SUBJECT TO ALP APPROVAL LETTER DATED 1/27/03
BY: DATE: 1/27/03
FAA AIRPORTS DIVISION
ALASKAN REGION, AAL-600
F.A.A. AIRSPACE REVIEW NUMBER: 00-AAL-600-

BY	DATE	REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION
APPROVED: STEPHEN M. RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: JOHN G WAHL P.E. — PROJECT MANAGER

DATE 4/01/02
DESIGN
DRAWN
CHECKED

AKIAK AIRPORT
AIRPORT LAYOUT PLAN
NARRATIVE REPORT

SHEET 7 OF 7